A REPORT ON

LOW-E GLAZED WINDOWS

IN DRYDEN OH-2

Dated:
January 4, 1988

Per :
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REPORT

PURPOSE

The purpose of this report is to record the year-end evaluation on the installation, performance and tenant satisfaction regarding low-emissivity (Low-E) glazed windows selected for Dryden OH-2 project in Northwestern region.

BACKGROUND

1. The project consists of a one storey, ten (10) senior citizen apartment building located on Charles Street in Dryden and is under administration since March 1, 1972.

2. Project's original windows consisted of wood-frame, semi-sashed, full sliders and combination fixed-slider type. Athough original windows were double glazed and the frames fairly well maintained with repainting, they were drafty, leaked during rains and had suffered some hardware and glass breakage. Also sashless sliders operation was difficult for seniors. Regional office therefore opted for full window replacements. (See photographs 1, 2, 3 and 4).

3. Both Building Codes and Ministry's technical standards require double glazing. However, windows still remain a weak link in the fight against heat loss in a building envelope. A double glazed window provides an R value of 1.8 as compared to R=20 for walls built to current designs.

4. Provision of triple glazing which provides R value of 2.8 was investigated for a universal requirement for Ministry's project in late seventies. However due to long payback periods for southern zones, it was decided that the requirement be restricted to more than 6,500 celsius degree-days zone.

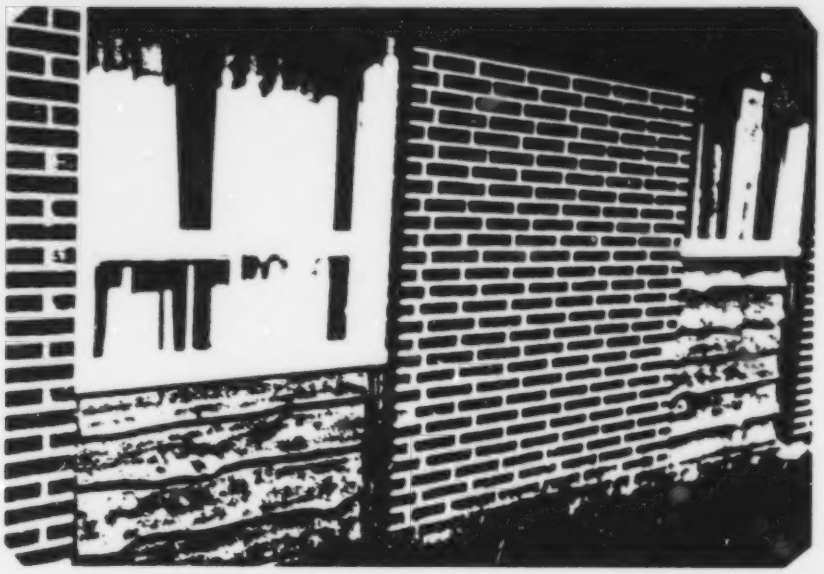
5. Among the better glazing systems - something that has high R value and still fits in a conventional window frame - low E glass appeared in the market a few years ago. It boosts double glazing into R=3.5 range without increasing the weight of the window units.

6. Dryden having total degree days of 6087C almost qualifies for triple glazing. Although low E windows cost an average 40% more than conventional units presently, the price gap is expected to drop eventually to a reasonable level of 10%. It was therefore decided to use this high-tech glazing on a trial basis as an Applied Research and Development project to evaluate their performance in the interim.

7. The following figures indicate the current payback periods in Ontario for comparison purpose:

	Double Glazing	Triple Glazing	Low-E-Glazing
Southern Zone	5 to 6 years	9 to 10 years	7 to 8 years
Northern Zone	3 to 4 years	7 to 8 years	5 to 6 years

1



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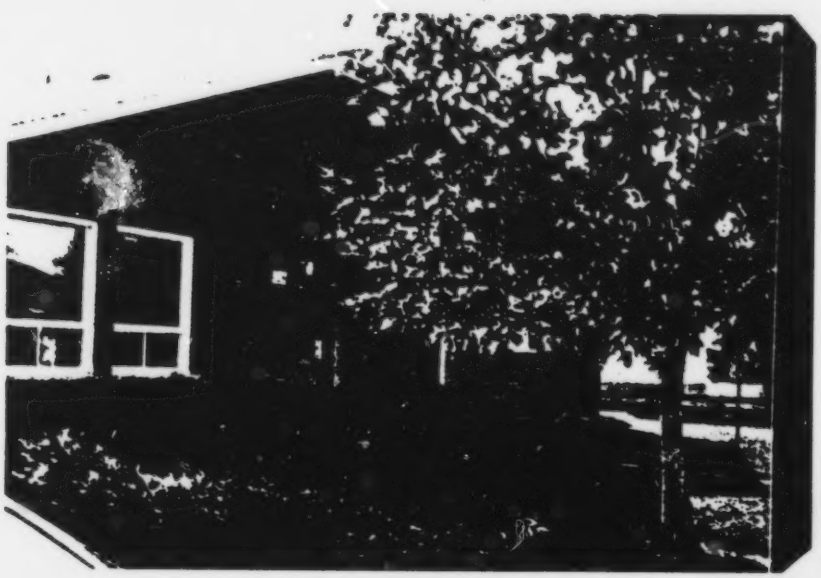

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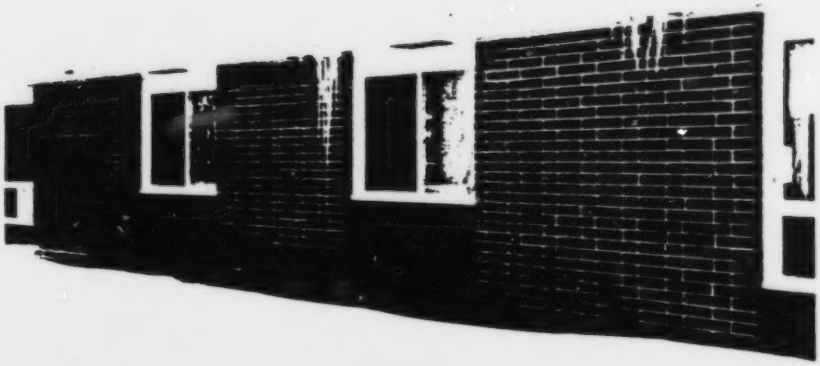

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BACKGROUND (cont'd)

7. New window design was selected to be full sliders for bedrooms and combination fixed-sliders for living rooms. All fixed and operating sash were sealed double glazed units, fully sashed in vinyl covered wood frames. The windows were custom fabricated by win-wood windows based on their model PH-500 using "Ford low-E" clear glass sealed units. Windows have now been in place since October 1986 (see photographs 5, 6 and 7).

EVALUATION

The product installation and performance assessment consisted of the following checks. Evaluation results are noted against each step:

1. Installation	- Installed satisfactory. - Finished very neatly. (see photographs 8 and 9)
2. General Appearance	- No cracking or bubbling of vinyl covering. Corners smooth, no extrusion, glass or hardware breakage. - General condition satisfactory. (see photographs, 10, 11 and 12)
3. Sealed low-E glass units	- No condensation or dust between panes. - No corrosion of spacer bar. - Transparency as good as regular - glazing, i.e. no deterioration of the low-E coating. - Tenants indicated that interiors, close to windows feel warmer. - Lighted match smoke indicated almost no drafts. - The overall evaluation of low-E glazing after 13 months is rated as excellent.
4. Sliders Operation	- Checks indicated that sliders open and close smoothly. - Sash tight fitting and yet could be removed easily (for cleaning). - Sliders operation satisfactory.
5. Hardware	- Not broken or missing. Windows locked securely. - Hardware quality satisfactory.

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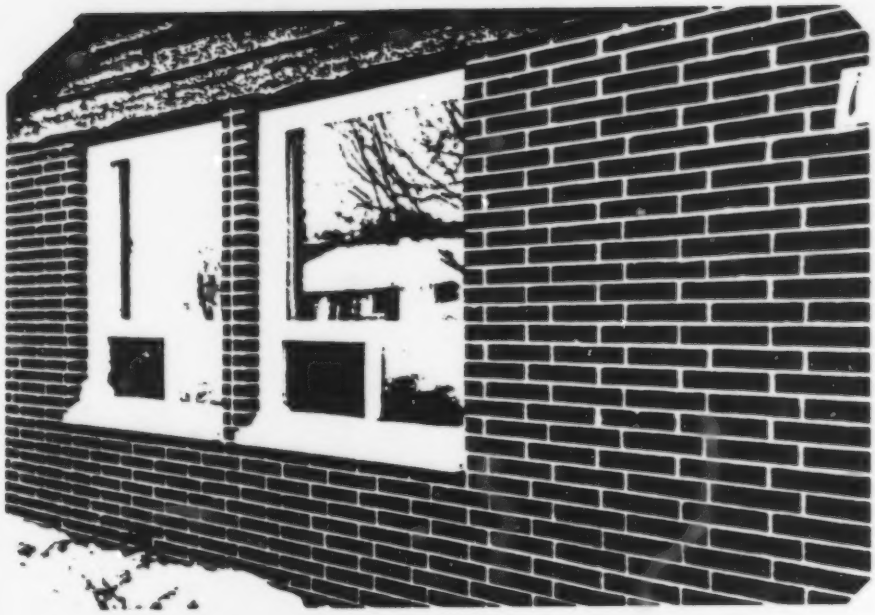

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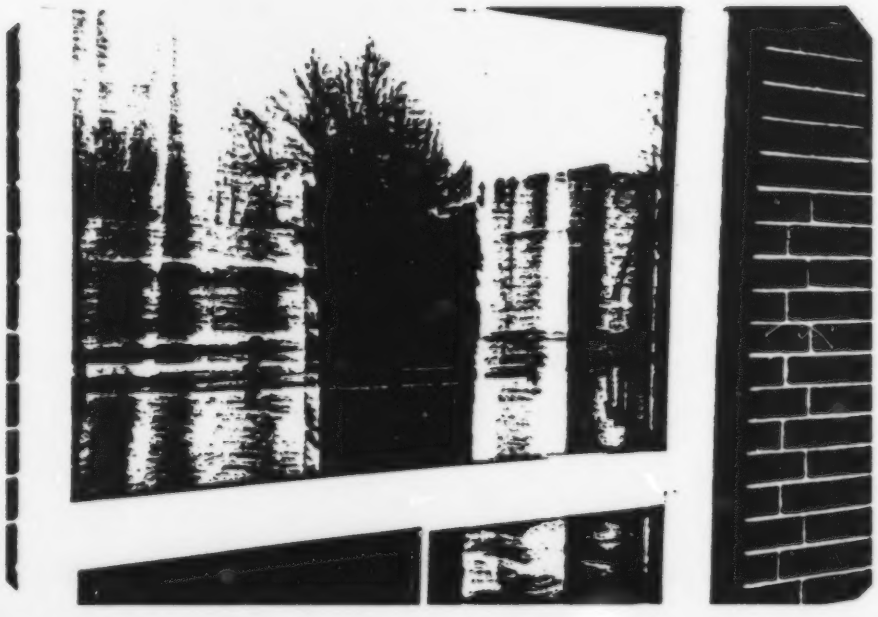

EVALUATION (cont'd)

6. Screens	- Not bent or torn, could be removed and reinstalled from the interior. - Screens condition satisfactory.
7. Weep Holes	- Adequate number, evenly placed, not plugged.
8. Weatherstripping	- Properly engaged, not worn or missing. - Tenant satisfied with air-tightness, no water leakage reported. - Weatherstripping satisfactory.
9. Caulking	- Acceptable width - 6 mm to 10 mm. Smooth without breaks and ridges. - Caulking work professional looking.

RECOMMENDATION

Although the evaluation on low-E glazed windows is satisfactory, due to 40% additional cost over the conventional units, any further retrofit work with this type of glazing should be postponed until price gap has dropped to a reasonable level.

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